

CLAIMS

1. A microscope, comprising:
 - a base,
 - a support arm attached to and extending upwardly from the base, the support arm including a secondary stage height adjuster;
 - a head attached to the support arm, the head including a lens;
 - an eyepiece attached to the head and in optical communication with the lens;
 - a stage releasably attached to the support arm between the head and the base, where:
 - the stage is releasably attachable to the support arm at a plurality of locations between the head and the base providing a plurality of working distances between a lower surface of the head and an upper surface of the stage, and
 - when the stage is attached to the support arm at a location, a working distance between the lower surface of the head and the upper surface of the stage is further adjustable to an either greater or lesser working distance using the secondary stage height adjuster; and
 - an illuminator positioned between the base and the stage.
2. The microscope of claim 1, wherein:
 - the head includes a first distal objective lens and a second distal objective lens, only one of which is in optical communication with the eyepiece at a given time; and
 - the stage can be releasably attached to the support arm in a first position such that when the first distal objective lens is in optical communication with the eyepiece, microscopic viewing is provided with magnification exceeding 45x and a working distance of 10 millimeters or less, and the stage can be releasably attached to the support arm in a second position such that when the second distal objective lens is in optical communication with the eyepiece, macroscopic viewing is provided with magnification less than 45x and a working distance exceeding 10 millimeters.
3. The microscope of claim 1, further comprising:
 - at least three legs attached to the base.

4. The microscope of claim 3, wherein the at least three legs are pivotable between at least an open position, wherein the legs support the microscope in a substantially vertical position and a closed position.
5. The microscope of claim 3, wherein each of the at least three legs include a foot pivotable about a point at which a foot attaches to a respective leg.
6. The microscope of claim 1, wherein the illuminator is battery-powered, the microscope further comprising:
 - a battery electrically connected to the illuminator.
7. The microscope of claim 1, wherein the illuminator comprises at least one LED.
8. The microscope of claim 1, wherein the secondary stage height adjuster includes a rack and pinion mechanism for further adjusting the upper surface of the stage to either a greater or lesser working distance when the stage is attached to the support arm at a location.
9. The microscope of claim 1, wherein the support arm includes a handle.
10. The microscope of claim 1, wherein the stage comprises a substantially transparent container including an interior region configured to contain a specimen.
11. The microscope of claim 1, wherein the stage comprises a frame and a container releasably attached to the frame.
12. A microscope, comprising:
 - a base,
 - a support arm attached to and extending upwardly from the base;
 - a head attached to the support arm;
 - an eyepiece attached to an upper portion of the head;
 - at least two distal objective lenses attached to a lower portion of the head;
 - a lens changer positioned within the head and between the eyepiece and the distal objective lenses, the lens changer:

rotatable about an axis that is substantially perpendicular to an optical path,
including a plurality of lenses arranged radially about the axis,
rotatable between a plurality of positions, such that in a position one or more
lenses of the plurality of lenses is in an optical path extending from the eyepiece to an upper
surface of a stage and including one of the distal objective lenses;

a stage attached to the support arm between the head and the base and positionable to
provide a plurality of working distances between a distal objective lenses and an upper surface
of the stage, wherein the stage can be positioned in a first position such that when a first distal
objective lens is in an optical path with the eyepiece, microscopic viewing is provided with
magnification exceeding 45x and with a working distance of 10 millimeters or less, and
wherein the stage can be positioned in a second position such that when a second distal
objective lens is in an optical path with the eyepiece, macroscopic viewing is provided with
magnification less than 45x and with a working distance exceeding 10 millimeters; and
an illuminator positioned between the base and the stage.

13. The microscope of claim 12, wherein microscopic viewing is provided at a plurality of
magnification levels between approximately 50x and 200x with an approximate working
distance of 5 millimeters.

14. The microscope of claim 12, wherein macroscopic viewing is provided at a plurality of
magnification levels between approximately 5x and 40x with approximate working distances
between 70 and 80 millimeters.

15. The microscope of claim 12, wherein:
the support arm includes a secondary stage height adjuster; and
the stage is releasably attachable to the support arm at a plurality of locations between
the head and the base providing a plurality of working distances between a distal objective lens
and an upper surface of the stage, and when attached to the support arm at a location, a working
distance between a distal objective lens and the upper surface of the stage is further adjustable
using the secondary stage height adjuster to an either greater or lesser working distance.

16. The microscope of claim 12, further comprising:

at least three legs attached to the base.

17. The microscope of claim 16, wherein the at least three legs are pivotable between at least an open position, wherein the legs support the microscope in a substantially vertical position and a closed position.

18. The microscope of claim 12, wherein the illuminator is battery-powered, the microscope further comprising:

a battery electrically connected to the illuminator.

19. The microscope of claim 12, wherein the illuminator comprises at least one LED.

20. The microscope of claim 12, further comprising a rack-adjustment mechanism for further adjusting the upper surface of the stage to either a greater or lesser working distance when the stage is attached to the support arm at a location.

21. The microscope of claim 12, wherein the support arm includes a handle.

22. The microscope of claim 12, wherein the stage comprises a substantially transparent container including an interior region configured to contain a specimen.

23. The microscope of claim 12, wherein the stage comprises a frame and a container releasably attached to the frame.